

ART. II. *Remarks on the Euphorbia Hypericifolia*. By WILLIAM ZOLLICKOFFER, M. D., F. C. P.; late Lecturer on Botany, Materia Medica, and Toxicology; Corresponding Member of the Medico-Botanical Society of London; Member of the Helvetic National Academy of Natural Sciences; Honorary Member of the Society of Natural Sciences of Saint Gall, Switzerland, &c.

SEVERAL years have elapsed since I first presented the medical community, through the medium of the New York Medical Journal, and of the Transactions of the Medico-Botanical Society of London, with some observations appertaining to the remedial virtues of the *Euphorbia hypericifolia*, the medicinal powers of which were unknown to the profession antecedent to that period.

Again I am induced to invite the attention of the members of the medical profession to the consideration of the subject of the utility of the interesting indigenous *hypericifolia*, from a conviction of the vast advantages which will necessarily accrue as a consequence of its judicious exhibition in the affections in which the classes of remedies are conjointly indicated to which it so deservedly belongs.

This vegetable production, that is exclusively a native of the United States, arrested my attention in the year 1819; since that time my mind has not unfrequently been directed to an investigation of its therapeutic operation, and, in a very great number of instances, I have been delighted with the efficient displays of its curative influence in diseases which had previously resisted the use of the ordinary astringents, administered alone, and in association with opium; a circumstance that doubtless is attributable to some peculiarity in its mode of action, depending upon certain elements that exists in its composition, as furnished by nature, which, although individually inert, confer additional strength and impulse upon the principles of activity with which they are associated, that cannot be successfully effected by any attempt of art in imitation of the combined powers which it displays, aided by the application of the most minute knowledge in the possession of the profession, in relation to the important principles of medicinal combination.

Kino and catechu, with many other vegetable astringents which I have often prescribed individually and in conjunction with narcotics, in the maladies in which the separate and conjoint exhibition of these remedial articles are often competent to the production of the happiest results, sink into comparative insignificance when viewed with the successful impressions which accompany this plant in its modes of

action, and in its ultimate consecutive displays, in accomplishing the important objects of its internal administration.

Medicinal consociations which are required to obviate different symptoms, or answer different indications, but by modes of action altogether opposed to each other, it is well known, should, in many instances, be had recourse to, in order to enable the physician to manage particular diseases with which he has to combat, with dexterous ability, with determinable promptness, and with ultimate success. Cases illustrative of this position can very readily be adduced in attestation of the assertion, and in demonstrative elucidation of the nature and importance of such combinations. The following one will doubtless be considered sufficiently competent of itself for the establishment of this declaration. "In diarrhœa, an astringent, properly so called, diminishes the flow of those acrid fluids into the intestines, by which their peristaltic motions are preternaturally increased, and it consequently represses the diarrhœa; a narcotic under similar circumstances might not repress the flow of acrid matter to which I have alluded, but it would render the bowels less susceptible to its stimulus, and would therefore produce the same apparent alleviation, although by a very different mode of operation." It will very readily be perceived that the restraining influence of the astringent is here displayed by the corrugating and consequent condensing power that it exerts on the intestinal canal; while the effect of the narcotic in diminishing the irritability of the intestinal organs and subsequently checking the diarrhœa, is the result peculiar to its operation in allaying the sensibility of the sentient parts of the animal economy. By a consociation of these two agents the practitioner avails himself at once of an important and decided advantage in arresting the progress of this excessive evacuation, not only with the more promptness, than by the single administration of an astringent, but with the more certainty of preventing its immediate return; for the narcotic diminishing the quickness of the sensation of the bowels to the action of the acrid secretions which are checked by the operative influence of the constringent agency of the astringent, until these secretions pass off by the rectum, greatly facilitates the effects of the latter medicinal substance, by its display of action in this way upon the sensibility. An astringent exhibited alone would be calculated to check the inordinate secretions, but these secretions would be reproductive of the diarrhœa, as a consequence of their irritating operation on the bowels; hence the necessity of the combined use of the remedies of the classes to which they belong, in order to insure the successful management of the malady that is here selected as the subject of illustration, in

order to demonstrate the nature and importance of medicinal combinations. It is to this double play in the remedial action of a narcotic associated in native combination with a powerful astringent, in the character of the *Euphorbia hypericifolia*, that gives to it the superiority it possesses over other analogous remedies effected by medicinal combination, with a view of producing similar consequential results.

Satisfied with these preliminary remarks, I shall in the further prosecution of this paper proceed with a relation of the botanical description of this useful plant; and avail myself of a notice of its chemical composition, and conclude with an historical account of the diseases in which it has proved itself competent to the production of the most satisfactory results.

The *Euphorbia hypericifolia* delights in a rich and prolific soil, and is an inhabitant of gardens and other fertile situations. It is recognised by the common and local appellations of black-pursely, milk-pursely, milk-weed, &c. MICHAUX, who doubtless was well acquainted with its botanical character, has favoured the medical profession with the following description of its specific difference, by which it can very readily be ascertained from any other individual belonging to the genus euphorbia. "*Euphorbia hypericifolia*, glabra, dichotome, ramosissima, erectiuscula-patula, ramis divaricatis; foliis oppositis, subfalcato-oblongis, argute serratis; ramusculis in summitate fasciculatim multifloris."

This species of euphorbia is an annual plant, that grows to the height of a foot, and is rather procumbent. It has a smooth stalk, which is repeatedly forked with divaricated branches. The leaves, which are opposite and oblong, are somewhat falciform, and deeply serrated; these are often covered with purple spots. The flowers, which appear in August and September, are white and situated in numerous quantities on the extremity of the small branches. This plant, of which I perceive there is another variety, belongs to the eleventh class, dodecandria: the third order, trigynia; and the natural order, tricoccæ of LINNÆUS, and euphorbiæ of JUSSIEU.

Being rather dissatisfied with the result of a former chemical examination of this plant, I concluded to extend my investigation upon this subject somewhat further. I digested several portions of it, after having previously reduced it to a state of pulverization, in sulphuric ether and alcohol. The ethereal solution gave a precipitate upon the addition of alcohol. The alcoholic preparation assumed a pearly turbidness when water was added. Both the ethereal and alcoholic solutions, upon being evaporated, afforded a residuum that burnt with

great vividness, and exhibited a flame much like that resulting from the combustion of spirit of wine. The infusion and decoction that was prepared from distilled water, produced a copious precipitate when gelatine was added; and assumed a dark blue colour on the addition of the sulphate of iron. From these results we may justly infer, that the chemical composition of this plant consists of caoutchouc, resin, tannin, and gallic acid.

To the organs of gustation this vegetable substance produces an impression somewhat different from all of the other species belonging to the genus *euphorbia* hitherto known. Its taste is sweetish; this is immediately succeeded by a sensation of harshness and roughness imparted to the palate, being too peculiar to be mistaken by even the most ordinary observer, who has ever attempted to eat a green persimmon. In its remedial character, it likewise differs very considerably from any other individual belonging to the same family of plants; so much so, that it seems to have been the prevailing opinion among practical and experimenting botanists, that all the species included in this extensive genus, *euphorbia*, possessed acrid and irritating qualities.

Relating more particularly to the therapeutic displays of the article that is the subject of this communication, I shall commence the notice of the diseases in which it has been exhibited with advantage, by first introducing dysentery as one of the examples in attestation of the remedial operation it exerts on the animal economy in removing diseased action, and in restoring the healthy condition of parts that are deranged in consequence of morbid excitement. In this malady, when the true dysenteric symptoms have continued, after the inflammatory diathesis had been removed by appropriate antiphlogistic means, I have been more successful with the use of this remedy, than with the conjoint administration of the ordinary astringents with narcotics. The evacuations have very soon become changed both as relates to their character, condition, and frequency, and the other unpleasant concomitant symptoms subside in a degree commensurate with the recession of the unfavourable appearances of these evacuations. In most of the cases which I have treated with this remedy, I have been enabled to effect their removal in the course of forty-eight hours. In the primary stage of dysentery, I have never given it a trial, from a persuasion, that remedies of this kind are in direct contravention to its successful management.

Diarrhœa, a malady with which the inhabitants of almost every section of the country are more or less affected, is a disease which, although in the generality of cases seldom prove so imminently dangerous as the one that has just been noticed; nevertheless, it not un-

frequently, from its debilitating influence, undermines the vital energies, and consequently acts as an outlet to human existence. In this affection I can recommend the article under consideration as a useful and valuable medicine. I have, however, previous to prescribing it in most instances directed the exhibition of calomel in conjunction with castor oil, or some other purgative medicine, with the view of removing any vitiated secretions that might be present in the intestinal canal. When this disease has been of long standing, from a protracted debility of the bowels, this remedial agent will be found a prompt and effectual remedy.

In menorrhagia arising from debility, and consequently requiring for its removal remedies that are competent to the production and restoration of the healthy tone and vigour of the general system, by which a corresponding impression is imparted to the uterine system, and the hæmorrhagic diathesis thereby removed, I have given the *hypericifolia* with most excellent effects. By its operation as a tonic, upon the principle of astringents acting as tonics, tone is imparted to the general system; while by the slight narcotic influence that it exerts in allaying and removing the irritability of the system, which is associated with this malady in unison with no inconsiderable degree of prostration of the nervous energy, the irregular catamenial flow, is brought within the controul of medical management, and the unfortunate sufferer soon experiences the happy adaptation of this application to the correction of this state of diseased action.

In fluor albus I have directed its use in twelve cases, in ten of which, in between twenty and twenty-five days, this affection disappeared. The remaining two were relieved by copious purgation. In these cases the disease seemed to owe its occurrence to the circumstance of plethora, in connexion with the existence of obstinate constipation of the bowels for several weeks.

The manner in which I have generally directed the *Euphorbia hypericifolia* to be used, is in the form of infusion, of the following strengths.—R. *Euphorbia hypericifolia folionem exsiccat.*  $\overline{3}$ ss. To be infused in a pint of boiling water for half an hour. In dysentery I mostly direct a table-spoonful to be given every hour until the morbid symptoms begin to yield; and then to be used less frequently. In diarrhœa, this quantity should be taken after every evacuation. The quantity that I have used in menorrhagia and fluor albus, is that of a wine-glassful morning, noon, and at night. I have said nothing of the dietetical plan to be pursued in consociation with the administration of this plant, because this part of the management of the cases noticed in this communication, is always regulated by the knowledge the practitioner has in relation to the *materia alimentaria*.